CLAIMS

What is claimed is:

1	1.	A method comprising:
2		generating a set of associated router packets from a function packet received
3	from a	function packet source, wherein each router packet has a router packet data
4	length	that is less than or equal to a function packet length; and
5		sending the set of associated router packets to a router.
1	2.	The method of claim 1, further comprising:
2		receiving the function packet from the function packet source, wherein the
3	function packet includes a function packet header and function data.	
1	3.	The method of claim 1, further comprising:
2		receiving a function packet header from the function packet source, wherein
3	the function packet header indicates the function packet length and the router packet	
4	data length.	
1	4.	The method of claim 1, further comprising:
2		receiving a segment of the function packet from the function packet source;
3		determining whether the segment of the function packet has a length at least
4	equal to the router packet data length; and	
5		if the segment of the function packet does have the length at least equal to
6	the rou	iter packet data length, proceeding to generate a router packet that includes
7	the seg	ment of the function packet.

- 1 5. The method of claim 1, wherein generating the set of associated router
- 2 packets comprises:
- determining the function packet length and the router packet data length
- 4 from a function packet header.
- 1 6. The method of claim 1, wherein generating the set of associated router
- 2 packets comprises:
- determining the function packet length from pre-stored function packet
- 4 length information that can be different from function-to-function.
- 1 7. The method of claim 6, further comprising:
- 2 manually re-configuring the pre-stored function packet length information.
- 1 8. The method of claim 6, further comprising:
- 2 dynamically adjusting the pre-stored function packet length information
- 3 based on system performance measurements.
- 1 9. The method of claim 1, wherein generating the set of associated router
- 2 packets comprises:
- 3 selecting a next segment of the function packet, wherein the next segment
- 4 has a segment length that is related to the router packet data length;
- 5 generating a router packet, which includes the next segment; and
- 6 repeatedly selecting the next segment and generating the router packet until
- 7 all of the function packet has been included in the set of associated router packets.
- 1 10. The method of claim 9, wherein generating the set of associated router
- 2 packets comprises:
- generating a router packet header, which indicates the router packet data
- 4 length.

- 1 11. The method of claim 1, wherein sending the set of associated router packets
- 2 comprises:
- sending the set of associated router packets to a source router for delivery
- 4 toward a destination router.
- 1 12. A method comprising:
- 2 receiving a set of associated router packets from a router, wherein each
- 3 router packet has a router packet data length, and a header of a router packet
- 4 indicates a function packet length that is larger than or equal to the router packet
- 5 data length;
- 6 re-assembling a function packet from the set of associated router packets;
- 7 and
- 8 sending the function packet to a function packet destination.
- 1 13. The method of claim 12, further comprising:
- 2 removing the router packet header of each packet of the set of associated
- 3 router packets.
- 1 14. The method of claim 12, wherein sending the function packet comprises:
- 2 sending the function packet when a quantity of re-assembled router packet
- data is equal to the function packet length.
- 1 15. A method comprising:
- a source adaptor generating a set of associated router packets from a function
- 3 packet received from a function packet source, wherein each router packet has a
- 4 router packet data length that is less than or equal to a function packet length;
- 5 the source adaptor sending the set of associated router packets to a source
- 6 router;
- the source router sending the set of associated router packets toward a
- 8 destination router;

- 9 the destination adaptor receiving the set of associated router packets from the destination router;
- the destination adaptor generating a re-assembled function packet from the
- set of associated router packets; and
- the destination adaptor sending the re-assembled function packet to a
- 14 function packet destination.
- 1 16. The method of claim 15, wherein generating the set of associated router
- 2 packets comprises:
- determining the function packet length and the router packet data length;
- 4 selecting a next segment of the function packet, wherein the next segment
- 5 has a segment length that is less than or equal to the router packet data length;
- 6 generating a router packet, which includes the next segment;
- 7 repeatedly selecting the next segment and generating the router packet until
- 8 all of the function packet data has been included in the set of associated router
- 9 packets.
- 1 17. The method of claim 15, wherein generating the re-assembled function
- 2 packet comprises:
- 3 removing a router packet header of each packet of the set of associated
- 4 router packets.
- 1 18. An apparatus comprising:
- a first data buffer, which is operable to receive a function packet from a
- 3 function packet source;
- a router packet formation module, which is operable to generate a set of
- 5 associated router packets from the function packet, wherein each router packet has a
- 6 router packet data length that is less than or equal to a function packet length; and
- a router interface, which is operable to send the set of associated router
- 8 packets to a router.

l	19. The apparatus of claim 18, further comprising:	
2	a second data buffer, which is operable to receive a different set of	
3	associated router packets and re-assemble a function packet; and	
4	a packet-based communications element interface, which is operable to send	
5	a re-assembled function packet to a function packet destination.	
1	20. The apparatus of claim 18, further comprising at least one antenna, which is	
2	operable to provide an interface between an air interface and the apparatus.	
1	21. An apparatus comprising:	
2	at least one router, which is operable to communicate with other routers	
3	using packet-based communications; and	
4	multiple processing elements, wherein selected ones of the multiple	
5	processing elements include	
6	at least one adaptor, operably connected to a router, which is	
7	operable to generate a set of associated router packets from a function	
8	packet received from a function packet source, wherein each router	
9	packet has a router packet data length that is less than or equal to a	
10	function packet length, and to send the set of associated router packets to	
11	a router, and	
12	at least one function packet source, operably connected to the	
13	adaptor.	
1	22. The apparatus of claim 21, wherein an adaptor comprises:	
2	a first data buffer, which is operable to receive the function packet from the	
3	function packet source;	
4	a router packet formation module, which is operable to generate the set of	
5	associated router packets from the function packet; and	
6	a router interface, which is operable to send the set of associated router	

packets to the router.

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- 1 23. The apparatus of claim 22, wherein the adaptor further comprises:
- a second data buffer, which is operable to receive a different set of
- 3 associated router packets and re-assemble a second function packet; and
- a packet-based communications element interface, which is operable to send
- 5 a re-assembled function packet to a function packet destination.
- 1 24. The apparatus of claim 21, further comprising at least one antenna, which is
- 2 operable to provide an interface between an air interface and the apparatus.
- 1 25. A computer-readable medium having program instructions stored thereon to
- 2 perform a method, which when executed within an electronic device, result in:
- generating a set of associated router packets from a function packet received
- 4 from a function packet source, wherein each router packet has a router packet data
- 5 length that is less than or equal to a function packet length; and
- 6 sending the set of associated router packets to a router.
- 1 26. The computer-readable medium of claim 25, wherein execution of the
- 2 method further results in:
- determining the function packet length and the router packet data length
- 4 from a function packet header;
- 5 selecting a next segment of the function packet, wherein the next segment
- 6 has a segment length that is related to the router packet data length;
- 7 generating a router packet, which includes the next segment; and
- 8 repeatedly selecting the next segment and generating the router packet until
- 9 all of the function packet has been included in the set of associated router packets.
- 1 27. The computer-readable medium of claim 26, wherein execution of the
- 2 method further results in:
- receiving a second set of associated router packets from the router;
- 4 re-assembling a second function packet from the second set of associated
- 5 router packets; and

6 sending the second function packet to a function packet destination.